

II. REMARKS

In response to the restriction requirement of January 29, 2003, the Applicant confirms the provisional election of Group I with traverse. The requirement for election between Group I and Group III is traversed because there is no support for the Examiner's conclusion that inventions of Group I and Group III are mutually exclusive species in an intermediate-final product relationship. For example, claims 10 and 31 are independent claims directed to a final product, namely, a fiberboard. Applicant respectfully submits that the restriction is therefore inappropriate.

In the Office Action of January 29, 2003, claim 15 was objected to because the word "of" is missing from the phrase "consisting of". Applicant has appropriately amended claim 15 to address the informality. In view of this correction to the claims, it is respectfully submitted that claim 15 is no longer objectionable for the reason cited in the Office Action.

Claim 12 Stands Rejected Under 35 U.S.C. §112, Second Paragraph

In the Office Action, claim 12 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, it was noted in the Office Action that it is unclear whether or not mineral wool is adhered to the ceramic fiber. Applicant has amended claim 12 to appropriately clarify the relationship between the mineral wool and the ceramic fiber; therefore, Applicant respectfully requests that the Examiner withdraw the indefiniteness rejection.

Claims 1-9 and 23-27 Stand Rejected Under 35 U.S.C. §102(b)

In the Office Action, claims 1-9 and 23-27 were rejected under 35 U.S.C. §102(b) as being anticipated by Francis U.S. Patent 5,723,226 (hereinafter Francis). It is respectfully submitted that Francis does not describe or suggest the present invention as claimed in these claims. Reconsideration of this rejection is respectfully requested for the following reasons.

Even though the instant invention does not preclude the use of gypsum, the Francis reference not only requires gypsum, but requires it in quantities that would necessitate that the board more accurately be described as a gypsum board rather than a fiber board (See, Column 4, line 45 through Column 5, line 62). In fact, the term "fiberboard" as defined in the Francis reference refers to "gypsum based articles of various and unrestricted dimensions and strength of the article is derived from the components of the composition from which the article is formed

(See, Column 12 lines 49-54). Independent claim 1, as amended, provides that the fibers comprise the largest solid ingredient by weight percent. This amendment adds no new matter but rather clarifies what is meant by fiberboard. To that end, the Francis reference fails to meet this limitation and therefore cannot anticipate the claimed invention. Moreover, claims 2-9 and 24-27 that depend either directly or indirectly there from, are also not anticipated by Francis. Dependent claim 23 has been cancelled.

Thus it is respectfully submitted that independent claim 1 is not anticipated by, or unpatentably obvious in view of, Francis, and are, therefore, in condition for allowance. Claims 2-9 and 24-27, depend, either directly or indirectly, from claim 1 and thus incorporate all of the features thereof. Thus, it is respectfully submitted that dependent claims 2-9 and 23-27 are also not anticipated by Francis, and are also, therefore, in condition for allowance.

Claims 10-16 Stand Rejected Under 35 U.S.C. §102(e)

In the Office Action, claims 10-16 were rejected under 35 U.S.C. §102(e) as being anticipated by Vandermeer U.S. Patent 6,214,102 (hereinafter Vandermeer). It is respectfully submitted that Vandermeer does not describe or suggest the present invention as claimed in these claims. Reconsideration of this rejection is respectfully requested for the following reasons.

Claim 10 of the present application is an independent claim drawn to a fibrous board comprising a body of fibers formed together without the use of off-gassing producing materials and is accumulated in such a way that post production surface processing is not necessary. It is submitted that the claim amendment makes explicit the implicit limitation that the fiberboard, in accordance with the present invention, does not require post-production surface processing or produce undesirable off-gassing and that the board is a fiber board. By the foregoing amendment, claim 10 has been amended to clarify that the fibrous board in accordance with the claimed invention is an alternative to vacuum forming methods. In fact, the "Background of the Invention" section of the present application describes the limitations of conventional vacuum forming processes such as the one disclosed by Vandermeer. The principal difference between the Vandermeer reference and traditional vacuum forming methods is the use of ionic attraction for binding. The vacuum forming process also requires a prolonged drying process, which is an undesirable byproduct.

Contrary to the Examiners suggestion that Vandermeer discloses the use of inorganic binders, Vandermeer provides that binding is a result of ionic attraction of the cationic starch, so as to floc the silica to the ceramic fibers (See,

Column 2, lines 55-65). Moreover, the cationic starch is subject to undesirable off-gassing during initial use, which strictly teaches away from the objectives outlined in the present application (See, Page 3, lines 19-26).

As discussed briefly above, the Vandermeer reference provides a method (i.e., vacuum forming) that requires top surface finishing, grinding, and/or sanding in order to obtain the target thickness. This too is contrary to the objectives of the claimed invention (See, Page 3, lines 10-17).

Therefore, because a product resulting from the Vandermeer process is subject to off-gassing and also requires post production finishing to achieve its target thickness, the Vandermeer process cannot be used to produce the presently claimed fiberboard. Moreover, since the Vandermeer reference discloses a vacuum forming process, it would not be a suitable reference to combine with any other reference to achieve the advantages of the presently claimed invention.

Thus, it is respectfully submitted that claims 10-16 are not anticipated by, or unpatentably obvious in view of Vandermeer, and are, therefore, in condition for allowance.

Claims 10-22 Stand Rejected Under 35 U.S.C. §103(a)

In the Office Action, claims 10-22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shannon U.S. Patent 3,661,663 (hereinafter Shannon) in view of Hart, U.S. Patent Number 6,043,172 (hereinafter Hart). The Examiner suggests that it "would have been obvious to one having ordinary skill in the art to use a ceramic fiber blend such as alumina silicate and mineral wool from the Hart reference bonded together to provide an insulation material that is shrink free and has excellent adhesive characteristics as shown by the abstract of the Hart reference." Applicant respectfully traverses.

There is no motivation to modify the Shannon reference to form a board product. In fact, Hart teaches away from key components of the Shannon reference by stating in relevant part "[u]nlike other ceramic fiber insulating products which require conventional binder, e.g., cement, or starch, or clays, the ceramic fiber insulating material herein produced is preferably prepared to be free of such binders. If such binders are imparted to the blend, e.g., during mixing to prepare the blend, the binders used are typically present in minor amount and are most usually organic binders such as starch, latex materials and cellulosic materials." (See, Column 7, lines 48-55). The Hart reference teaches away from the use of binders in general and inorganic binders in particular. Though Shannon provides for the use of organic binders, the type of organic binders provided by Hart are incompatible with Shannon since they do not provide the porosity needed for the Shannon product to be

operable. In particular, Hart provides for a "substantially water-soluble, nonionic polymeric gelling agent" (Column 2, lines 33-42), which is essentially incompatible with the Shannon binder because the Hart gelling agents would not be able to withstand leaching out of the insulation material or form a porous barrier. To this end, the preferred embodiment of Hart does not even disclose a binder.

Moreover, and contrary to the Examiner's contention, the presence of potassium silicate in the Shannon reference is not as a binder generally or as an inorganic binder in particular, but rather as a chloride ion stress inhibitor. Unlike instant claims 14-22, the Shannon reference provides for a porous organic binder (See, Abstract and Example 1, Column 2, lines 20-33). As discussed above, the presence of the organic binder leads to off-gassing when the product is initially used. This is contrary to the objectives of the presently claimed invention, which makes both the Shannon and the Hart references inappropriate methods for producing the claimed fiberboards. Additionally, Hart suggests a neutral pH while Shannon suggests a more alkaline pH (See, Hart Column 6, lines 15-20 and Shannon Column 3, lines 3-10).

Moreover, the presently claimed invention is entitled "Pressed Ceramic Fiber Board And Method of Manufacturer." The Hart reference provides that "...there is still a need in the industry for an improved, asbestos-free, insulating material, which may be fashioned **without compression** into a wide variety of shapes yet retain the ruggedness and long service life of asbestos [emphasis added]." Hart teaches away from the present invention by suggesting that compression is undesirable in manufacturing a board product. The theory being that though pressed boards are more durable, they are not amenable to shaping diversity (See, Hart Column 1, lines 43-67). This shortcoming of conventional pressing methods is solved by the instant invention. In fact, the present invention provides a pressed board having desirable strength characteristics without being limited with respect to finishing dimensions (See, Page 3, line 18 through Page 4, line 24).

The method of manufacturing the Shannon and Hart products impart undesirable characteristics (e.g., off-gassing, etc) to the resulting product that are specifically rejected by the instant invention. Therefore, the Shannon and Hart products are distinct from the claim invention at least in part because of the process by which they are made.

Thus it is respectfully submitted that, claims 10-22 are not unpatentably obvious over Shannon in view of Hart, and are, therefore, in condition for allowance. For the foregoing reasons, it is respectfully submitted that all of the pending claims in this application, as amended, are in condition for allowance. Favorable action on this application is, therefore, solicited.

Respectfully submitted,



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